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<div>(84)</div> <div>Designated Contracting States: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LU MC NL PT SE SK TR Designated Extension States: AL LT LV MK RO SI</div> <div>(30)</div> <div>Priority: 24.08.2001 US 939418</div> <div>(71)</div> <div>Applicant: Hewlett-Packard Company Palo Alto, CA 94303 (US)</div>	<div>(72)</div> <div>Inventor: Dove, Daniel J. Colfax, CA 95713 (US)</div> <div>(74)</div> <div>Representative: Powell, Stephen David et al Williams Powell, Morley House 26-30 Holborn Viaduct London EC1A 2BP (GB)</div>
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(54)

Interface apparatus

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A Gigabit Media Independent Interface (RG-MII), which is adapted to also implement a ten bit interface (RBTI) that is intended to be an alternative to both the IEEE 802.3z GMII and the TBI is disclosed. The interface has a reduced number of input and output pins, i.e., pin-count, that can implement the above BMII and TBI standards. More particularly, the interface reduces the number of pins required to interconnect the MAC

and the PHY from a maximum of 28 pins (TBI) to 12 pins in a cost effective and technology independent manner. The RGMII maps pins to transfer data at the same data rate with control functionality with a minimum number of input and output pins, and does so by utilizing both the raising and falling edges of the clock signal and complies with existing interface specifications set forth in the IEEE standards.

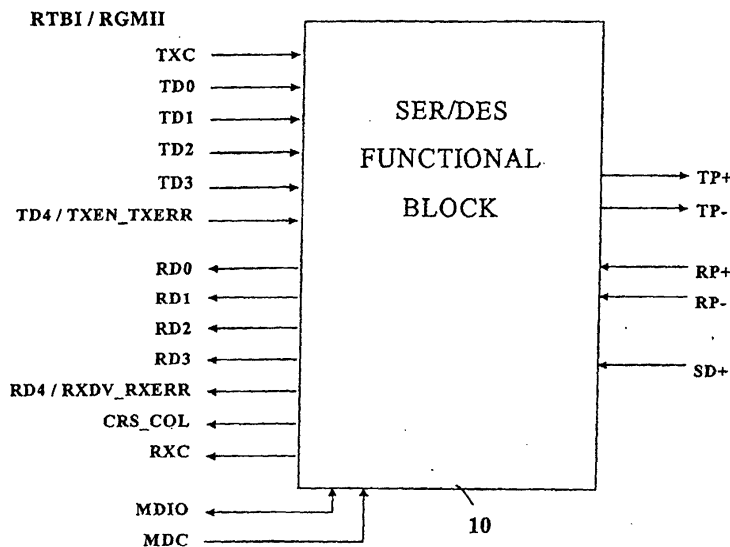


FIG. 1



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EUROPEAN SEARCH REPORT

Application Number
EP 02 25 5636

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X A	US 6 061 362 A (BERG CURT ET AL) 9 May 2000 (2000-05-09) * abstract * * column 1, line 6 - line 13 * * column 1, line 40 - line 62 * * column 2, line 31 - line 47 * * column 3, line 7 - line 13 * * column 4, line 42 - column 5, line 53 * * column 7, line 18 - line 29 * * claims 1-3 * ---	1,2,9 3-8	H04L29/06 H04L12/413 H04L12/44
A	US 6 108 726 A (RUNALDUE THOMAS JEFFERSON ET AL) 22 August 2000 (2000-08-22) * abstract * * column 1, line 55 - column 2, line 22 * * column 2, line 48 - column 3, line 35 * * column 4, line 20 - line 25 * * column 4, line 34 - column 5, line 14 * * claims 1,6 * ---	1-9	
A	WO 98 11695 A (ADVANCED MICRO DEVICES INC) 19 March 1998 (1998-03-19) * abstract * * page 3, line 1 - line 26 * * page 5, line 20 - line 32 * * page 6, line 2 - line 27 * * page 8, line 27 - page 9, line 10 * * page 9, line 15 - line 24 * * page 10, line 3 - line 9 * * page 15, line 22 - line 36 * --- -/--	1-9	TECHNICAL FIELDS SEARCHED (Int.Cl.7) H04L
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 24 October 2003	Examiner Lai, C
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

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EUROPEAN SEARCH REPORT

Application Number
EP 02 25 5636

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	<p>FRAZIER H M: "MEDIA INDEPENDENT INTERFACE CONCEPTS AND GUIDELINES"</p> <p>WESCON CONFERENCE, IEEE CENTER, HOES LANE, US,</p> <p>7 November 1995 (1995-11-07), pages 348-353, XP000586592</p> <p>ISSN: 1044-6036</p> <p>* abstract *</p> <p>* page 348, left-hand column, line 18 - line 28 *</p> <p>* page 349, left-hand column, line 18 - right-hand column, last line *</p> <p>* page 351, left-hand column, line 1 - right-hand column, line 3 *</p> <p>* page 352, left-hand column, line 18 - right-hand column, line 8 *</p> <p>-----</p>	1-9	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
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Place of search		Date of completion of the search	Examiner
THE HAGUE		24 October 2003	Lai, C
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone</p> <p>Y : particularly relevant if combined with another document of the same category</p> <p>A : technological background</p> <p>O : non-written disclosure</p> <p>P : intermediate document</p> <p>T : theory or principle underlying the invention</p> <p>E : earlier patent document, but published on, or after the filing date</p> <p>D : document cited in the application</p> <p>L : document cited for other reasons</p> <p>& : member of the same patent family, corresponding document</p>			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 02 25 5636

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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